User's Guide

LAN-32PCIR
32-bit PCI Bus Ethernet Adapter

Congratulations on your purchase of the LAN-32PCIR PCI Ethernet adapter. With this high performance adapter, you are sure to get the most out of your investment. If you are experienced network user. You can run RSET8029.EXE setup program to configuration your adapter.
If you are first installation network. You must be reference this guide and view README.TXT file in the drivers diskette. You will install successfully. Again thank you for use our product.

Introduction

The LAN-32PCIR is a 32-bit high performance Ethernet network interface card for PCI Bus compliant PCs. It combines two common types of Ethernet cabling an RJ-45 connector for Unshielded twisted-pair cabling ,a BNC connector for thin Ethernet connector .Extensive driver support for commonly used network operating system is available. Using the supplied fast driver. The performance are greatly improved more than 50% compared with general NE2000 Ethernet card and nearest Bus Master PCI Ethernet adapter.

Features

- Complies with IEEE802.3 10Base-T & 10Base-2 standards.
- Compatible with PCI Bus Specification Rev 2.0 & later.
- Provides 32-bit data transfer to maximize throughput and optimize CPU utilization.
- Software compatible with NE2000 driver.
- Support Full-Duplex Ethernet function to double channel bandwidth.
- Automatic Adapter configuration setup using the PCI computer's BIOS setup program.
- Software driver automatically detects TP or BNC media-type connection.
- Built-in data early fetch function to improve network performance.
- Support 16K Boot ROM function for PCI Bus.
- Provides two LED indicators for monitoring network traffic transfers.
- Supports auto polarity correction for 10 Base-T

Hardware description

The LAN-32PCIR use has two LED indicators two types of network connections and RPL BootROM(option). The following figure is the side view of the adapter.

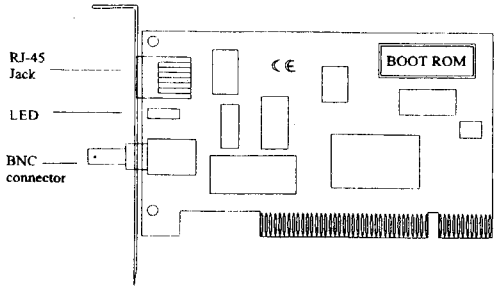

Figure 1 LAN-32PCIR Adapter

LAN connectors

The adapter supports IEEE802.3 10Base-T,10Base-2.
It supports the following network connections onboard:

- RJ-45 connector for twisted-pair cabling
- BNC connector for thin Ethernet cabling

* Media-type in use is automatically detected by the hardware.

LED Indicators

The adapter provides two LED indicators for monitoring network conditions. This section describes the function of each LED. Refer to the following figure for the LED location.

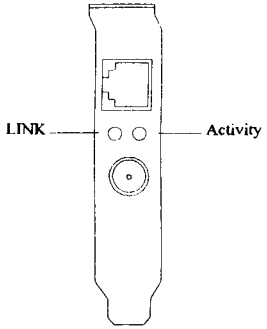

Figure 2 LED Indicators

Link: (Green) The twisted-pair link status indicator.

(RED) This LED is show transmit or receive status of the connect port. It lights up to indicate the presence of network activity on the connected port. The rate of flashing is proportional to the amount of network traffic.

Hardware Installation

The section describes the procedure for installing the adapter.

Follow the steps listed below to install the LAN-32PCIR adapter

1. Power off your PC and remove its cover.
2. Select an empty PCI slot and insert the adapter.
3. Connect your adapter to the network using 10Base-T(RJ-45) or 10Base-2(BNC)
4. Power on the PC
5. Change the computer's BIOS setup to set "Device Enable" option to ON, select an IRQ setting and the trigger/routing method for the IRQ.
6. Run diagnostics program to check the adapter's hardware installation. See the section on "Diagnostic Software" for more information.
7. Installation the software driver. Refer to the Software Drivers section.

Adapter Configuration

The adapter is configured using the host PCI computer's BIOS setup program. This is done by changing the computer's BIOS settings. The procedure to do this and the terminology used depend on the BIOS you are using.
For example, if your computer uses the Phoenix BIOS, there is a Device Select field where you should input the slot number of the PCI slot where the adapter is installed, say Slot 3 Device. Select Enabled for the Enable Device filed and assign an IQR number (the adapter's IQR setting is mapped to the BIOS IRQ setup of the host PCI computer).

Note: Some BIOS have Bus Master mode enabled(hard-coded)for all its PCI expansion slots, others provide you with option of turning this feature On or Off. Either case will not affect the PCI card's operation

Finally, you need to set the Trigger/Routing field to select the Trigger method by which the IQR is assigned or routed to the PCI slot .

There are three types of settings to choose from:

1. **Level/Auto**-This is usually the default . Choosing this option leaves the assigned IQR free for other use if the installed card does not use it.
2. **Level/Forced**-If you are not able get the PCI card o work properly, choose this option. This will assign the specified IQR permanently to the card.
3. **Edge /Auto**-Some PCI boards support this optibn. Do not use it.

Note:

1. The PCI adapter can only function with the EMM386.exe memory manager program version 4.49 or later. You can verify its version number by entering EMM386 At the DOS Prompt.

2. Do not specify the "HIGHSCAN" option with the EMM386.exe statement in your CONFIG.SYS file or your system will hang.

3. If you run MEMMAKER and select Custom Setup, do not specify "Aggressively scan upper memory", or it will automatically insert the HIGHSCAN flag into the EMM386 command line. This parameter cannot be manually remove once it's installed, doing so will cause the extended memory manager to malfunction.

Hardware Configuration and Diagnostics

Note: **Run diagnostics before the software driver don't loaded into the system. Otherwise, your system may hang.**

The Setup program (RSET8029.EXE) comes with the driver diskette. It performs hardware configuration and diagnostics. The following are the general tasks performed by RSET8029.EXE:

- View current configuration
- Set up new configuration
- Run diagnostics

Running Setup

Insert the driver diskette in you floppy drive. The RSET8029 program is in the \UTIL> directory of your driver diskette. Change to the appropriate directory location, type the following command and press[Enter]

A:\UTIL>RSET8029↵

This will initiate the menu-driven RSET8029 program and display the Main menu as shown below:

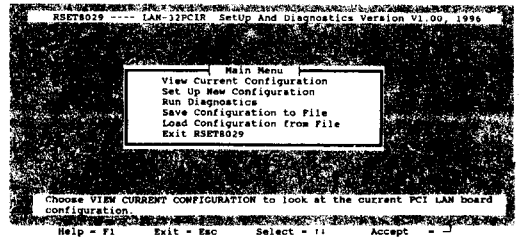
RSET8029 ---- LAN-32PCIB SetUp And Diagnostics Version V1.00, 1996
Main Menu
View Current Configuration
Set Up New Configuration
Run Diagnostics
Save Configuration to File
Load Configuration from File
Exit RSET8029
Choose VIEW CURRENT CONFIGURATION to look at the current PCI LAN board configuration.
Help = F1
Exit = Esc
Select = ↑↓
Accept = ↵

Figure 3 Main Menu screen

Select this option to view the current adapter setting as show below:

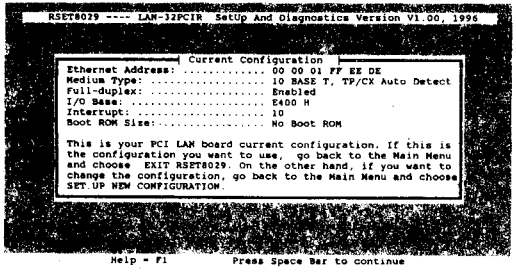
RSET8029 ---- LAN-32PCIR SetUp And Diagnostics Version V1.00, 1996
Current Configuration
Ethernet Address: ..... 00 00 01 FF EE DE
Medium Type: ..... 10 BASE T, TP/CX Auto Detect
Full-duplex: ..... Enabled
I/O Base: ..... E400 H
Interrupt: 10
Boot ROM Size: ..... No Boot ROM
This is your PCI LAN board current configuration. If this is the configuration you want to use, go back to the Main Menu and choose EXIT RSET8029. On the other hand, if you want to change the configuration, go back to the Main Menu and choose SET UP NEW CONFIGURATION.
Help = F1
Press Space Bar to continue

Figure 4 Current Configuration screen

If you need to modify the current configuration, return to the Main menu and select Set up New Configuration will shown below:

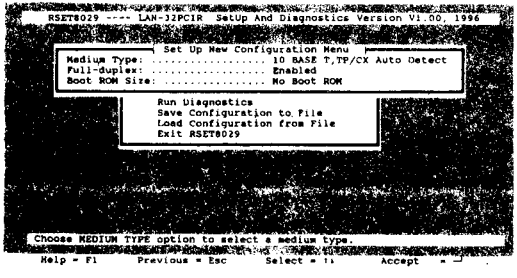
RSET8029 ---- LAN-32PCIR SetUp And Diagnostics Version V1.00, 1996
Set Up New Configuration Menu
Medium Type: ..... 10 BASE T,TP/CX Auto Detect
Full-duplex: ..... Enabled
Boot ROM Size: ..... No Boot ROM
Run Diagnostics
Save Configuration to File
Load Configuration from File
Exit RSET8029
Choose MEDIUM TYPE option to select a medium type.
Help = F1
Previous = Esc
Select = ↑↓
Accept = ↵

Figure 5 Set Up New Configuration Menu screen

If your computer complies with PCI BIOS Standards, the system will automatically allocate necessary I/O, IQR and Boot ROM address (if necessary) resources to the adapter. The Setup program will not allow you to change the resources which are allocated by the PCI BIOS. Yet, it allows users to change the following settings to suit their requirements:

- Medium type
- Full-duplex function
- Boot ROM size

Port Connection

The transceiver setting should agree with the network cabling type. The program provides 2 choices:

- 10 Base T, TP/CX Auto detection
- 10BaseT/coxial

The first choice allows the adapter to perform media-type auto-detection between 10 Base-T (RJ-45) and 10 Base2 (BNC).

Full-Duplex

If the server you are attached to and all interconnecting devices(e. g switching hubs) support this mode, then enable full-duplex.

Boot ROM Size

The adapter provides an empty socket for installing a 16KB Boot ROM.

If your server provides boot services, the Boot ROM permits the client PC to download the disk operating system (DOS) or network drivers over the network. Boot ROMs are available from your adapter dealer.

The Boot ROM is disabled by default When a Boot ROM is installed on the adapter, you can enable the boot function by selecting the "16Kilo-Bytes" option in the Configuration Menu.

Run Diagnostics

To test the adapter's components and installation, RSET8029 Runs three different test on the adapter and corresponding cabling system as listed below

- EEPROM Test
- Diagnostics on Board
- Diagnostics on Network

EEPROM Test
Performs Read tests on each register in the EEPROM

Testing the Adapter Board
The test monitors the adapter and corresponding cabling system. However, it does not test the network's condition.

The screen displays the PASSED or FALLED count for each test, If a test fails, press the <Space> bar to display the reason for failure and possible solutions.

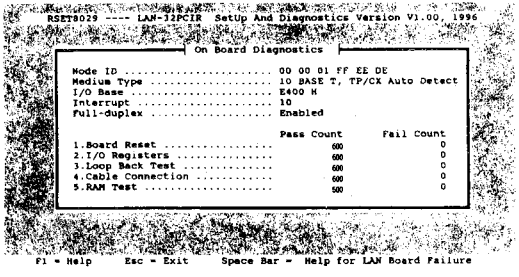
RSET8029 ---- LAN-J2PCIR SetUp And Diagnostics Version V1.00, 1996
On Board Diagnostics
Node ID ..... 00 00 01 FF EE DE
Medium Type ..... 10 BASE T, TP/CX Auto Detect
I/O Base ..... E400 H
Interrupt 10
Full-duplex ..... Enabled
Pass Count Fail Count
1.Board Reset 600 0
2.I/O Registers 600 0
3.Loop Back Test 600 0
4.Cable Connection 600 0
5.RAM Test 500 0
F1 = Help Esc = Exit Space Bar = Help for LAN Board Failure

Figure 6 On Board Diagnostics screen

This test checks the following items:

- **Configuration Test** =Checks the initial status of the controller
- **I/O Registers Test** =checks I/O accessibility
- **Internal Loop Back Test** =check adapter's controller
- **External Loop Back Test** =checks the network link
- **RAM Test** =checks the condition of on-board RAM

Testing the Network Connection

This test verifies your adapter's communication with another devices on the network. At the start of the test , set up one computer as a Responder and at least one as an Initiator. The Responder communicates with one Initiator at a time. The Responder displays the status of communications with each Initiator on the network: while the Initiator displays the current Responder and the status of corresponding communications.

Note: Should any of these tests fail, reboot your computer and run the diagnostics again to see if the problem persists.

Specifications

I/O Address.....:Automatically
Interrupt.....:BIOS IRQ setup
Topology.....:Star/Bus
Transmission Rate.....:10Mbps/20Mbps(UTP)
Connectors Support.....:RJ-45 (10BaseT), BNC(RG-58 Coaxial)
Temperature.....: 0· to 55·c
Humidity.....:10% to 905(non-condensing)
Size.....:4.74 ×3.22(120mm×81.5mm)

Hardware Certification
EMI Certification.....: FCC Part 15 Class A
CE Mark

Supported Network Drivers

- Novell Netware V 3.X, 4.X (included IPX, ODI, Server drivers)
- Microsoft LAN Manager for OS/2 & DOS system
- Microsoft Windows for Workgroups, V 3.1 & V 3.11
- Microsoft Windows NT V 3.1 & V 3.5
- Microsoft Windows 95, 98
- IBM PCLAN Program.(NetBIOS Driver)
- IBM PCLAN Server (OS/2 Warp)
- DEC Pathworks.
- SUN Micro PC-NFS.
- Banyan Vines.
- TCP/IP for SCO Unix.
- Pathway platform
- Packet Drivers for FTP TCP/IP, NCSA TCP/IP.

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